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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/600,675	06/20/2003	Mark J. Schnitzer	9	5670

7590 11/22/2005

Docket Administrator (Room 3J-219)
Lucent Technologies Inc.
101 Crawfords Croner Road
Holmdel, NJ 07733-3030

EXAMINER	
VU, MINDY D	

ART UNIT	PAPER NUMBER
2884	

DATE MAILED: 11/22/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

AK

Office Action Summary	Application No.	Applicant(s)	
	10/600,675	SCHNITZER, MARK J.	
	Examiner	Art Unit	
	Mindy Vu	2884	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-16* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2,4 and 6-16* is/are rejected.

7)☒ Claim(s) *3 and 5* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *20 June 2003* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *9/15/03*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

This Office Action is in response to the Applicant's application filed June 20, 2003.

Drawings

The drawings are objected to because Fig. 2 does not include a bottom margin of at least 1.0 cm as stated under 37 CFR 1.84(g). Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement-drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

The disclosure is objected to because of the following informalities: The number is inconsistent for the same element in the imaging system 90: "spots 52" (pg. 11 line 1) & "spots 38" (pg. 11 line 16).

Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-2, 4, 6-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Denk et al. (US 2002/0080359) in view of Suhami (6,795,199) and further in view of Goldberg et al. (5,548,113).

With respect to Claims 1 and 11, Denk et al. discloses a method and an apparatus for an imaging system (Abstract, for example Fig. 1), comprising: a pulsed laser 3; a pre-compensator 8 configured to receive optical pulses produced by the pulsed laser and to chirp said optical pulses to pre-compensate for chromatic dispersion; a transmission optical fiber 10 configured to receive and transport the chirped optical pulses from the pre-compensator (Paragraph 0028).

Denk et al. discloses passive optical system 20 to focus scan pulses but does not identify the components (Fig. 2). Thus, Denk et al. lacks a GRIN lens configured to

receive the optical pulses transported by the fiber and wherein the GRIN lens has a wider optical core than the transmission optical fiber and the GRIN lens is configured to substantially narrow the optical pulses received from the fiber. Suhami discloses in a similar imaging system include a GRIN bar and optics 17 right next to it to focus the narrow beam transversally (Col. 9 lines 16-22). Goldberg et al. discloses an optical fiber placed within dithering piezoelectric and through a hole formed essentially in the center of the lens and the optical lens are interchangeable with graded index lens (GRIN) (Fig. 3A & Col. 6 lines 12-21). In view of the narrowed pulse delivered by the GRIN lenses of Suhami and Goldberg et al., which affords a smaller spot on the sample, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the system 20 of Denk et al. by including GRIN lens arrangements as shown by Suhami and Goldberg et al.

With respect to Claims 2, 4 and 12, Denk et al. discloses the transmission optical fiber is a single-mode optical fiber (Paragraph 0035).

Applicant is advised that should claim 2 be found allowable, claim 4 will be objected to under 37 CFR 1.75 as being a substantial duplicate thereof. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

With respect to Claim 6, Suhami discloses the pulsed laser is configured to produce optical pulses with temporal widths of less than about 400 femtoseconds (Col. 12 lines 19-23).

With respect to Claim 7, Denk et al. discloses a light detector 14 configured to detect an intensity of light collected from a sample by the lens in response to the sample being illuminated by optical pulses delivered by the lens (Paragraph 0029).

With respect to Claim 8, Denk et al. discloses a mechanical oscillator 24 configured to cause the optical pulses delivered by the lens to scan over a self-crossing Lissajous pattern in the sample (Paragraph 0040).

With respect to Claim 9, Denk et al. discloses a processor configured to produce an image of the sample from data indicative of positions illuminated by the delivered optical pulses and corresponding light intensities detected by the light detector (Paragraph 0038).

With respect to Claim 10, Suhami discloses an optical lens coupled to an end of the GRIN lens located opposite to an end of the GRIN lens that receives optical pulses from the optical fiber (Fig. 1). It would have been obvious to one of ordinary skill in the art at the time of the invention was made to include such an addition of lens in the system of Denk et al. in view of the advantageous pulse narrowing described by Suhami.

With respect to Claim 13, Denk et al. discloses focusing the optical pulses transmitted through the lens onto spots of a self-crossing scanning pattern in a sample (Paragraph 0040).

With respect to Claim 14, Denk et al. discloses driving a mechanical oscillator with a voltage that includes two driving frequencies (Paragraph 0040).

With respect to Claim 15, Denk et al. discloses forming an image of the sample from light emitted by the sample in response to molecular multi-photon absorptions caused by the focusing (Paragraph 0031).

With respect to Claim 16, Denk et al. discloses forming an image of the sample from light emitted by the sample in response to molecular two-photon absorptions caused by the focusing (Paragraph 0031).

Allowable Subject Matter

Claims 3 and 5 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: The prior art does not teach or suggest the GRIN lens is configured to temporally narrow the optical pulses received from the transmission optical fiber by about 50 or 30 percent or more.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mindy Vu whose telephone number is 571-272-8539. The examiner can normally be reached on M-F 9am - 5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dave Porta can be reached on 571-272-2444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

mv

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